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ABSTRACT

The extrication course is part of a planned program of courses designed to upgrade the training of ambulance attendants in life-saving and life-sustaining techniques. Contents include objectives and scope; a course outline; comments on instructors, students, class size, training facilities; and wrecked vehicle sources, safety precautions, and security. Other topics are simulated casualties, material and equipment, and testing and grading students. Visual aids, texts, and supplementary references are listed. The major part of the document, designed as a course coordinator's guide, contains five lesson plans: Basic Considerations, to inform students of the purpose, scope, and requirements of the course; Removal Problems, to teach entry techniques, emergency medical care, stabilizing and securing techniques, and techniques of removing victim in different positions from the vehicle; Demonstration of Forcible Entry, Disentanglement, and Safety Techniques, to develop a basic understanding of how to evaluate situations, safety precautions, gaining access to the victim, and releasing the victim from entrapment; practice, to provide practice and skills training in entry, emergency medical care, disentanglement, and removal; and Conclusions, to evaluate the training course and give certificates and awards. (NH)

ED 098 381

EMERGENCY MEDICAL TECHNICIAN

CRASH VICTIM

EXTRICATION TRAINING COURSE

COURSE COORDINATOR'S GUIDE

CE 002 470

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PREFACE

The goal of the National Highway Traffic Safety Administration (NHTSA) Department of Transportation, pursuant to the Highway Safety Act of 1966 and the Emergency Medical Services Standard 11, has been to upgrade and professionalize the ambulance field, enhance its life-sustaining quality, and encourage its establishment where it does not now exist. With regard to upgrading, it is the view of the Administration that the ambulance attendant or technician does not properly fall into the category of unskilled labor as has tended to be the practice. Rather, this should be a person highly trained and skilled in both lifesaving and life-sustaining techniques. Consequently, the Administration has devoted special effort to plan, develop, and provide the training courses necessary to achieve this end and goal. This Extrication Course is a part of the total planned program of courses. It is the hope of the Administration that it will receive extensive use and further enhance the care of the crash victim.

James E. Wilson
Associate Administrator
Traffic Safety Programs

ACKNOWLEDGEMENTS

The assistance of many individuals and organizations were vital to the development of this course on *EMT Crash Victim Extrication*. We are grateful and wish to thank the U. S. Public Health Service, the Associate Ambulance Service, Phoenix, Arizona; Phoenix Fire Department, Phoenix, Arizona; Emergency Medical Services, Arizona State Department of Health; Emergency Medical Services, Indiana Department of Public Health; Emergency Medical Services Division, Maine State Department of Health and Welfare; and especially the Emergency Medical Services Program staff, Department of Health, Commonwealth of Virginia. Our gratitude also goes out to the Westvaco, Petersburg and Manassas Rescue Squads of Virginia, who pilot tested the course and assisted in the development of the sound slide portion of the training course. We want to especially thank Mr. O. B. Streeper and others who graciously contributed illustrative material to this course.

We are especially grateful and wish to thank Dr. Louis C. Kossuth, Commissioner, Arizona State Department of Health, who served as consultant in the development of this training program, to Mr. Robert E. Motley of the NHTSA, Rescue and Emergency Medical Services Division, who served as technical advisor, and to Mr. Leo R. Schwartz of the NHTSA, Rescue and Emergency Medical Services Division, who contributed to the organization of this material.

Dawson A. Mills, M. D.
Chief, Rescue and Emergency
Medical Services Division, OSDI
Traffic Safety Programs

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FOREWORD

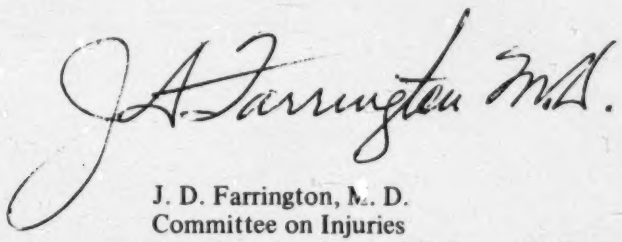
National guidelines for emergency medical care in the United States were established in the landmark document *Standard No. 11 – Emergency Medical Services*, published by the National Highway Traffic Safety Administration (NHTSA), following the passage of the Highway Safety Act of 1966. The Standard clearly identifies the responsibility of ambulance and rescue services to provide more than transportation alone. It is based primarily on guidelines and recommendations of the National Academy of Sciences (NAS) Committee on Emergency Medical Services in their publication titled "Training of Ambulance Personnel & Others Responsible for Emergency Care of the Sick and Injured at the Scene and During Transport." Consequently, both NAS and NHTSA recommend that all ambulances be equipped with certain lifesaving equipment and manned by at least two persons trained in specified areas of emergency medical care, i.e., NHTSA Basic 81-hour Training Program for Emergency Medical Technician – Ambulance. Specifically, all ambulance services should furnish skilled emergency medical care to victims of all injuries and medical emergencies. Additionally, the *Standard* identifies the need to establish an emergency medical career pattern which provides attractive compensation, prestige, and recognition commensurate with the services provided by these personnel.

Following the publication of Standard No. 11, the National Highway Traffic Safety Administration moved to assist the States in implementation of the national standard in emergency medical services. A first step, to provide the States with guidelines on programs of instruction for ambulance and rescue personnel, resulted in the development of an 81-hour study course, *Basic Training Program for Emergency Medical Technician – Ambulance* and associated *Refresher Course*. The Course encompasses the knowledge and skills required to perform all emergency care procedures short of those rendered by physicians or emergency care personnel under the supervision of a physician.

To assist the States further in implementation of the *Standard*, the NHTSA developed two additional courses, *Dispatcher EMT Training Course* and *EMT Crash Victim Extrication Training Course*.

The purpose of this course is to upgrade the skills and knowledge of the emergency medical technician (EMT), in the methods of extricating victims from crashed vehicles. The course also is designed to develop the EMT's ability to establish priorities for removing the victims safely. Although it is designed specifically as an adjunct to the course, *Basic Training Program for Emergency Medical Technician – Ambulance*, this course meets most requirements for teaching light and medium duty extrication methods as an independent course of study. Additional documents produced as part of this course include a detailed *Instructor's Lesson Plan*, and a *Student Guide*, which serves as the course text.

The extrication techniques described herein are those methods considered most appropriate by emergency medical service organizations that assisted in the development of the course. The methods and the equipment identified are endorsed by the U. S. Government but should not be construed as the only possible techniques or tools of extrication.



J. D. Farrington, M. D.
Committee on Injuries
American Academy of Orthopaedic Surgeons
and
Committee on Trauma
American College of Surgeons

EMERGENCY MEDICAL TECHNICIAN
CRASH VICTIM EXTRICATION TRAINING COURSE

COURSE COORDINATOR'S GUIDE

Purpose of the Guide

This course guide has been prepared to assist course coordinators and other individuals in organizing and implementing a course of study on *Crash Victim Extrication.* It contains an outline of the course, instructor and student qualifications, classroom and demonstration equipment requirements and guidelines for conducting the course.

Objectives and Scope of Course

The purpose of the course is to upgrade the EMT's skill, knowledge and ability to establish priorities for removing persons from crashed vehicles. Although designed basically as an adjunct to the NHTSA 81-hour Basic Training Program for Emergency Medical Technician – Ambulance, this course also meets the requirements for teaching light and medium duty extrication methods as an independent subject.

The course emphasizes the development of the EMT skills in gaining entry, freeing and removing an injured and trapped individual without causing further trauma. Specific objectives of the course are:

1. To teach EMTs their role and responsibilities in extrication.
2. To develop EMTs skill in analyzing the accident situation, gaining access, instituting lifesaving emergency medical care techniques, stabilizing, disentangling, and removing the injured victim from the wreckage.
3. To develop EMTs skill in the use and care of extrication and related tools and equipment.
4. To develop EMTs awareness of the hazards he may encounter at the accident scene.

Course Outline

The course consists of five lessons involving 16 hours of instruction, demonstration, individual participation and testing. The first lesson introduces students to the basic considerations of extrication, i.e., the role of the EMT, emergency medical care measures involved in preparing the victim for safe removal, and a description of extrication tools and equipment. Subsequent lessons contain demonstrations of the proper use of the equipment, a sound slide presentation on various extrication skills used by the EMT.

Lesson titles, objectives and the time for each follow:

LESSON	TIME REQUIRED
1 Basic Considerations	3 Hours

- Inform the students of the purpose, scope and requirements of the course.
- Provide an overview of the role of the EMT in extrication.
- Develop an understanding of the principles of and considerations in extrication.
- Introduce the EMT to extrication tools and equipment.

2 **Removal Problems** **2 Hours**

Teach the following skills:
- Entry techniques.
- Immediate emergency medical care principles.
- Victim stabilizing and securing techniques.
- Techniques of removing victim in different positions from the vehicle.

3 **Demonstration of Forcible Entry, Disentanglement, and Safety Techniques** **3 Hours**

Develop a basic understanding of the following:
- Evaluate situations.
- Safety precautions.
- Gaining access to victim.
- Releasing victim from entrapment.

4 **Practice (Skills Training)** **6 Hours**

Provide practice of the following skills:
- Entry.
- Emergency medical care.
- Disentanglement.
- Removal.

5 **Conclusion** **2 Hours**

Class evaluation of training course:
- Certificates and awards.

Instructors The lead instructor and instructor aides utilized should be certified Emergency Medical Technicians thoroughly knowledgeable with the information and skills of the particular lesson period. Since most extrication is performed by fire departments, rescue squads, and ambulance services, personnel from these services with extensive experience in extrication procedures should be utilized as lead instructor and instructor aides. It is suggested that emergency medical care procedures in the course be taught by physicians if at all practical. Physician participation will afford him an opportunity to become acquainted with the problems the EMT is confronted with at the scene of the accident. Once exposed to the problems the physician may be more receptive to assist in on-going training programs for the local ambulance and rescue personnel. Hopefully he will also identify the ambulance services as an extension of the hospital emergency department and rightfully a part of the medical community. Guidance for instructors on effective teaching techniques is provided in Appendix B, *Instructor's Lesson Plans, Basic Training Program for Emergency*

Medical Technician – Ambulance. The student's demonstration of extrication skills should be the primary factor in the grading process.

Students

This course has been developed for all ambulance and rescue personnel who provide light and medium duty extrication services. Heavy duty rescue operations is considered a specialty by itself. A separate course in heavy duty rescue operations will be developed at a later date if there is a sufficient demand. Desirable qualifications for EMTs to attend the *Crash Victim Extrication Course* are:

1. Have satisfactorily completed the NHTSA 81-Hour Basic Training Course for EMT – Ambulance or equivalent.
2. Possess an interest and desire to expand on their basic extrication knowledge.
3. Be able to work as a team member and insure calm, deliberate and sensible action.
4. Be able to analyze a situation accurately and take or suggest an effective course of action.
5. Meet qualification standards imposed by the State in which the course is offered.

Class Size

It is recommended the class size be limited to 24 students in order that maximum student participation can be achieved in the lecture, demonstration and practice periods. It is recommended also that at least one instructor aide for each eight students be provided during practice and demonstration periods; the most favorable ratio being one instructor aide for each four students.

Training Facilities

The training facility for classroom instruction should be indoors. Outdoor facilities may be better suited for demonstration and practical work sessions unless the time of year would create a problem due to inclement weather. Good indoor locations are armories, schools, garages, airport hangars, firehouses and fairground exposition buildings. If indoor space for demonstration and practice sessions is not available an adjacent or nearby parking lot, school yard, vacant lot or auto-salvage yard may be used. Try to avoid excessive transportation of students and equipment.

When the training facility is selected, consideration should be given to adequate parking, lighting, heating, ventilation, public address system and electrical outlets for projection equipment.

There should be sufficient floor space for the following:

1. A classroom area for 24 students seated at desks or tables with writing surfaces for notetaking and equipment examination.
2. A lecture area containing a lecturn, chalkboard, and a stand for charts and other visual aids.

3. A projection area for a 35mm slide projector and screen.
4. An exhibit area where extrication equipment and supplies may be displayed on tables.
5. A demonstration and practice area with space for a minimum of four wrecked automobiles (one for demonstration and three for student drills).
6. The front seat of an automobile mounted on a sturdy platform is an excellent means of demonstrating backboard techniques to the class.

Wrecked Vehicle Source

The minimum number of wrecked vehicles required for this course is one for demonstration purposes and one for each practice team. Cars may usually be obtained from law enforcement compounds, used car dealers, cab companies, city salvage yards, and automobile insurance companies. It is suggested that two front doors, one from a model before 1967 and one after 1967 be obtained to demonstrate the difference between the regular and safety door latches. Or, the instructor may have available one of each of the door locking mechanisms to illustrate this point. The wrecked automobiles should be carefully selected to permit full application of all extrication tools. Towing to and from the training site by police, private towing service or AAA affiliates – with police cooperation is recommended. Normally wrecked vehicles and towing services will be provided as a public service.

Safety Precautions and Security

Special safety precautions should be taken for the demonstration and practice periods of extrication. The wrecked vehicles should be securely shored and blocked to prevent the danger of tipping. The gas tank, fuel lines, carburetor and oil pans should be drained and flushed; and the battery should be deactivated. These precautions will minimize the danger of fire or explosion. Either foam, CO^2, or dry chemical fire extinguishers must be present. It is also suggested that charged firelines are laid and personnel with firefighting knowledge be on hand at all times.

Students and instructors should be equipped with hard hats, gloves and goggles. This requirement should be included in the course announcement as the EMTs will usually be a member of an active service and have their own safety equipment.

If the wrecked vehicles are outdoors, security measures should be taken to avoid vandalism and possible injury to youngsters who might be tempted to play in the vehicles.

Simulated Casualties

The use of simulated casualties is suggested for the demonstration and practice periods of instruction. Moulages and cosmetic applications can present the students with victims who have suffered a variety of

common vehicle injuries. This realism may help to develop the student's ability to recognize various injuries and better prepare him for his encounter with actual victims.

Whenever possible it is recommended that experienced EMTs be used as accident victims. They have first hand knowledge on how the injured victim reacts to mishandling, improper application of splints and other devices.

The "victims" should be instructed to wear old clothing that may be torn and stained to add realism to the makeup.

Simulated casualties acted out by the EMT "victims," may be used as an effective public relations tool. The realistic demonstration or practice could be an informative story for the community through the news and TV media. A well informed general public can be instrumental in backing the ambulance and rescue services in the passage or updating of legislation to upgrade services.

Material and Equipment

The following extrication and emergency medical care equipment is suggested for this course. It is suggested that each practice team be provided with a complete set during the practice phase of the instruction. The students will be expected to make their own choice of tools during the various "drills." The instructors should grade the individual student on his choice of equipment. It is understood that many ambulance and rescue services will not have all of the equipment identified in this training course. The instructor should select and place emphasis on the equipment most commonly used by the ambulance and rescue personnel he is instructing. He should however, introduce and train students in the use of new tools. This will serve in upgrading extrication and rescue operations in his area. The suggested list for each work group is as follows:

(1) Wrench, 12" adjustable, open end
(1) Screw driver, 12", regular blade
(1) Screw driver, 12', Phillips blade
(1) Hacksaw with 12 wire (carbide blades)
(1) Sledge hammer, 4-6 lb., with 15" handle
(1) Fire axe, pick head, 36" handle
(1) Wrecking bar, 24"
(1) Pry bar 6-8'
(1) Crow bar, 5', pinch point
(1) Boltcutter with jaw opening 1" or better
(1) Shovel, 49", pointed blade
(1) Channel pliers
(1) Porta-power kit complete, two-ton
(1) Double action tin snip, hand operated, 8"
(1) Cold chisel, 1/2" x 12"
(1) Cold chisel, 1" x 12"
(1) Seat belt cutter
(2) Linesman's knife

(2) Baling hooks
(?) Goggles, 1 for each student and instructor
(?) Hard hats, 1 for each student and instructor
(?) Leather palm working gloves, 1 for each student & instructor
(12) Wood shoring blocks, 2" x 4" x 10", with rope handles
(4) Wood shoring blocks, 4" x 4" x 10", with rope handles
(4) Wood shoring blocks, wedge shaped, with rope handles
(2) Blankets
(1) Come-a-long, 1 or 2 ton, chain type
(1) Alloy steel rescue pull chain, 6 foot
(1) Air cutting gun kit, 220 lb
(1) Auto jack
(6) Sand bags
(2) Extrication straps, 9' long and 2" wide with buckles
(1) Emergency medical care supply
(1) Hemp rope 100', and linesman's gloves (hot line)
(1) Short backboard with accessories
(1) Long backboard with accessories
(1) Extrication rope sling, 6' of manila rope
(1) Scoop type orthopaedic stretcher
(1) Thomas half ring splint
(4) Padded board splints 3" x 15"
(4) Padded board splints 3" x 36"
(2) Sets air splints
(1) Cervical collar
(2) Push paddle ¼" x 1" x 15" wood, all sides beveled (optional, used to push cravat under the victim when applying backboard).
(10) Cravats

Testing and Grading Students

EMTs taking the course should be given both written and practical tests of knowledge and skills. Since it is inadvisable to standardize written or practical tests, questions will need to be developed each time the course is conducted, with special emphasis on local problems. Each instructor should be responsible for developing and submitting questions covering the lesson, and the course coordinator responsible for consolidating all the submitted questions into a balanced test and for administering and grading the examination. Guidance for developing and scoring tests is provided in the *Instructor's Lesson Plans, Basic Training Program for Emergency Medical Technician – Ambulance, Appendix A.*

Sufficient time has been provided in Lesson No. 4 for practical tests and evaluation of skills. Critiques by the team instructor and fellow students is an excellent method of evaluating skills.

It is suggested that the State agency design a special arm patch for those completing this course to stimulate a sense of competition and a mark of distinction among ambulance and rescue personnel.

Visual Aids, Texts and Supplementary References

Slides: A set of 35mm sound slides is provided with this extrication training course. These slides are numbered to match the sequence in which they are used in the Instructor's Lesson Plans.

Films: Time for film showing should be held to a minimum. For extrication training it is essential that as much time as possible is spent in "hands on" training. Films are more useful as refresher in-service training aids.

Texts and Supplementary Reading for Instructors and Students – State and Local Option:

Basic Training Program for Emergency Medical Technician – Ambulance. Instructor's Lesson Plans. Superintendent of Documents, Washington, D.C. 20402 – $2.50. Order No. TD2.208:EM3/3.

Basic Training Program for Emergency Medical Technician – Ambulance. Course Guide and Course Coordinator Orientation Program. Superintendent of Documents – 35¢. Order No. TD 2.208:EM3/2.

Patient Handling Manual for Emergency Medical Technicians – Ambulance. Superintendent of Documents – 60¢. Order No. TD8.8:EM3/3.

Emergency Care and Transportation of the Sick and Injured. American Academy of Orthopaedic Surgeons, $4.95 each, Chicago.

Emergency Victim Care. Edited and distributed by Instructional Materials Laboratory, Trade and Industrial Education, Ohio State Univ. College of Education, Columbus, Ohio 43210

First Aid and Emergency Rescue, Lawrence W. Erven, Glenco Press. 1970, Beverly Hills, California.

Emergency Care. Harvey Grant & Robert Murry. Robert J. Brady Co., 130 Que Street, N. E., Washington, D. C. 20002.

Course: Crash Victim Extrication

Lesson Title: Basic Considerations

Time: 3 Hours

Instructor's Lesson Plan

1

Instructional Aids: Chalkboard, chalk, eraser, 35mm slide projector, recorder, screen, and slides

Objectives:

1. Inform the EMTs of the purpose, scope and requirements of the course.
2. Provide an overview of the role of the EMT in extrication.
3. Develop an understanding of the principles of and considerations in extrication.
4. Introduce the EMTs to the operation and function of all extrication tools and equipment.

TEACHING POINTS	NOTES AND VISUAL AIDS

A. INTRODUCTORY REMARKS

1. Introduce self and instructor aides.
2. Welcome students and guests.
3. Describe the purpose of the course:
   a. Upgrade skills and knowledge of individuals concerned with extrication.
   b. Briefly review the scope of the course identifying what will be covered in each lesson.

B. ADMINISTRATIVE MATTERS

1. Hand out and have students complete registration form.
2. Identify time and place for each lesson. Telephone number for emergency calls. Rest rooms, eating facilities, etc.
3. Discuss requirements for satisfactory completion of course:
   a. attendance.
   b. testing.
   c. attitude and conduct.
4. Solicit questions regarding the proceedings of the course, and request written recommendations for course improvement.

C. BASIC CONSIDERATIONS

1. Discuss role of EMT in extrication.
   a. Make general survey of total accident scene.
   b. Account for all victims.
   c. Administer necessary emergency medical care to victims before and during extrication.
   d. Select appropriate tools and equipment to gain access to victims.
   e. Establish and maintain a safe working environment.
   f. Assure that victims are removed from vehicles in such a way as to minimize further injury.
   g. If heavy duty rescue crews and other emergency services are present, cooperate with their activities, and designate on-the-scene authority for coordination.
2. Explain management of vehicle injuries.
   a. Be calm and deliberate.
   b. If victim is conscious, identify yourself as an emergency medical technician and *explain what you are going to do.*
   c. Check for and establish an airway.
   d. Check for dangerous bleeding.
   e. Examine victim for other injuries, particularly fractures.
   f. Apply appropriate emergency medical care measures.

TEACHING POINTS	NOTES AND VISUAL AIDS
g. With maximum gentleness, remove individual(s) on appropriate carrying device. 3. Review emergency medical care measures involved in preparing patient for removal: a. Dressing and bandaging wounds. b. Immobilizing extremity fractures. c. Use long and short backboards with appropriate accessories. 4. Introduce to the students the operation and purpose of each tool that will be used during the extrication course. It is recommended that a complete set of tools (listed previously) be made available to each team and spread out on work tables or on the floor. The Team instructor aides should demonstrate how each tool operates, identify safety features, and explain the function it serves in the extrication or forcible entry procedures. Each student should be able to operate all tools, know their use and be required to demonstrate his proficiency in their operation before the drill sessions. This practice session is essential for the prevention of possible injury to the student or to his team mates during the practical sessions. Also, there will be less chance for the students damaging the tools due to improper application.	

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Course: Crash Victim Extrication

Lesson Title: Removal Problems

Time: 2 Hours

Instructor's Lesson Plan

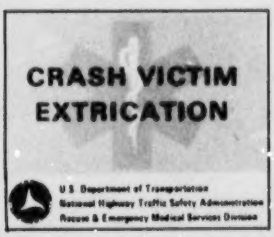
2

Instructional Aids: Lighted podium, 35mm slide projector, screen, slides and recorder.

Objectives: Teach the following skills:

a. Entry techniques
b. Immediate emergency medical care principles
c. Victim preparation techniques
d. Techniques of victim removal from different positions in the vehicles

TEACHING POINTS	NOTES AND VISUAL AIDS
The instructor has the option of using the sound slides with the prepared text or he may use the slides with his own presentation.	



Slide 1

CRASH VICTIM EXTRICATION

It would be impossible to characterize a typical accident scene by a simple, straight-forward review of events and procedures performed by various personnel. It is a matter of chance as to who is available and willing to report the accident to the proper authorities.

Slide 2

Many vehicle accidents are discovered and reported by persons passing who are not involved in the accident themselves. However, there might be individuals within the involved vehicles who are able to egress from the vehicle and to make their way to a telephone or other means of summoning help.

Slide 3

Law enforcement officers on patrol, a routine ambulance, fire truck or a tow truck may be first at the scene of an accident. Depending upon personal background, training, responsibilities and financial interests, varying reports on the condition of the accident victims and descriptions of the vehicle will be made. In rural areas, a passerby may have to travel several miles to a telephone.

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REMOVAL PROBLEMS

Slide 4

Whereas in cities, it may be just a short distance to a telephone. In some areas, telephone operators are trained to assist the person who wishes to report an accident. Because of long distances and rural situations, it is very possible that a passerby may attempt to render assistance before going for help on the theory that immediate help, although amateur, is more important than professional aid that may be obtained later.

Slide 5

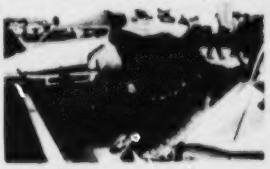
The general public should be emphatically advised that if they are not trained – *DO NOT MOVE THE VICTIM*. They should comfort the victim while someone else goes for help.

Slide 6

Seasoned rescuers are firmly convinced that each extrication problem is different. There have been few or no previous attempts to find patterns from statistical evidence or serious efforts to record detailed descriptions of activities at rescue scenes from which such patterns might be deduced.

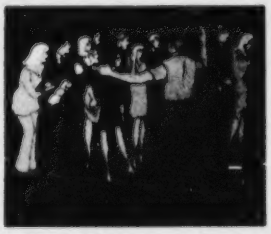
Slide 7

Law enforcement agencies are usually considered to have primary responsibility at the scene of an accident. Often the control of traffic is all many can manage. However, many officers may be well trained in emergency care and will perform minimal urgent care until the arrival of an ambulance.



Slide 8

The accident scene may involve personnel from a great many different agencies for specific functions which need to be performed. There will be numerous arrivals and departures. Traffic will have to be controlled to prevent further collisions.



Slide 9

Curious on-lookers will have to be controlled and kept away from the scene. Ambulances and sometimes fire equipment will be arriving and departing the scene. News media such as newspaper men, radio and television reporters may be on the scene.

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REMOVAL PROBLEMS

Slide 10

There will be reports to be made out by police; exchange of names and addresses between drivers and all of this adds to the confusion at the scene. But in most instances, once the ambulance or rescue vehicle arrives at the scene, extrication activities will be turned over to them by the policemen.

Slide 11

Although most tools and equipment used in extrication are not designed or selected for extrication activities alone, it has been determined that certain functions, procedures and equipment are basic. These are applied in a variety of ways, according to the ingenuity of the trained EMT or rescuer, their knowledge, and the advantages and disadvantages of the tools.

Slide 12

Some basic tools have been well adapted to certain jobs in extrication while others may create additional hazards, such as fire.

DEGREE OF EFFECTIVENESS IN RESCUE

1. Gaining access
2. Training of personnel
3. Equipment available
4. Condition of victim(s)

Slide 13

The degree of effectiveness in emergency medical care rendered is dependent upon gaining access to a victim, the training of the personnel, the equipment available and the condition of the victim. Limited access to the victim may prevent the most effective care and treatment, but all attempts must be made to insure that life is maintained. Not only must life-threatening medical problems be resolved, but those that may cause unnecessary permanent injury or needless suffering should be treated as soon as possible. Methods of gaining access and disentangling vehicle parts and debris from around the victim requires alternate approaches and exercises of ingenuity in the use of available methods and tools. The primary problem is that no two accidents are exactly alike although some similarities exist.

GENERAL RULES FOR RESCUE

1. Survey entire accident scene
2. Identify and correct hazards
3. Correct life threatening conditions
4. Immobilize victim(s)

Slide 14

Prior to gaining access to the victim, one should survey the situation and determine if special hazards are present. Safety efforts should be initiated if there is a threat to life during the process of extrication. The general rule is that no patient should be removed until life-threatening conditions are corrected and the patient's body is immobilized as one complete unit.

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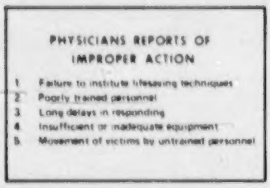

PHYSICIANS REPORTS OF
IMPROPER ACTION
1. Failure to institute lifesaving techniques
2. Poorly trained personnel
3. Long delays in responding
4. Insufficient or inadequate equipment
5. Movement of victims by untrained personnel

Slide 15

Problems bearing on extrication which have been cited by physicians discussing the subject include the following:

First, the failure to institute life-saving techniques such as:

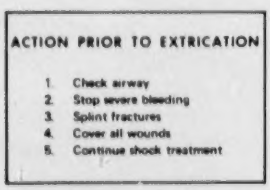
a. Establishing an airway
b. Maintaining an airway and artificial respiration
c. Control of bleeding and
d. Closed-chest heart compression

The second problem was poorly trained personnel responding to emergency calls.

The third problem was long delays in responding to emergency calls.

The fourth, insufficient or inadequate designs of equipment.

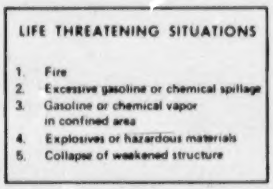
The fifth, movement of the victim by untrained personnel.



Slide 16

This sequence of action must be followed by the emergency medical technician prior to extrication:

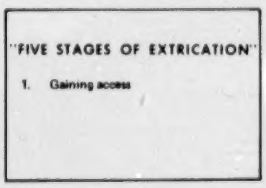
1. Check to insure the airway is open, and that the victim is breathing. If not, support the victim's breathing by the appropriate means.
2. Stop severe bleeding.
3. Splint all suspected fractures or dislocations.
4. Cover all other wounds to prevent contamination.
5. Continue shock treatment even if you do nothing more than reassure the victim.


LIFE THREATENING SITUATIONS
1. Fire
2. Excessive gasoline or chemical spillage
3. Gasoline or chemical vapor
in confined area
4. Explosives or hazardous materials
5. Collapse of weakened structure

Slide 17

However, the general rule must be disregarded if the victim's life and well-being are endangered. This would apply for the EMT as well. In the following cases the patient should be moved out of danger at once if possible:

1. Fires.
2. Excessive gas spillage that could be ignited by a spark or flame.
3. Gasoline or chemical leaking on the victim or creating vapors in a closed area.
4. Explosives or other hazardous materials.
5. Weakened structures.



Slide 18

Extrication is divided into five stages. *The first stage* would be gaining access to the victim. Gaining access to the victim depends on the location and position of the automobile, its damage and the position of the victim. It may be as simple as opening a door or as difficult as cutting open a severely damaged vehicle.

Slide 19

Typical procedures for simple cases will involve prying tools of various kinds to spread metal, open up doors or provide an opening through the vehicle in some manner.

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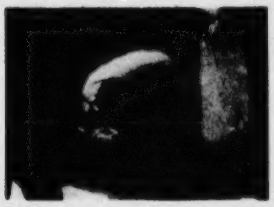
REMOVAL PROBLEMS

Slide 20

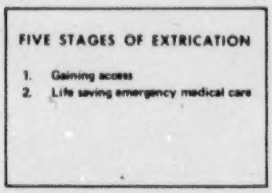
Slide 21
It could also involve cutting off the roof, jacking the vehicle off a victim, sawing through a tree, breaking glass or removing debris.

Slide 22
Generally speaking, most EMTs feel that the best procedure is to use devices, such as the air cutting gun which does not create sparks, heat, or flame because of the danger of spilled fuel in the vicinity of the accident. The vehicle construction and the deformation of the vehicle are of primary importance and directly affect, first, the manner in which a victim is trapped or pinned; and second, the means of disentanglement. Factors such as vehicle orientation, access routes, injuries and environmental conditions, natural as well as crash-induced, will also have an influence during this first phase of extrication. Time of day and weather conditions will also affect the operation. Certainly the same job would seem more difficult if it had to be performed at night during a severe storm. Gaining access may be dangerous both for the victim as well as the EMT, and it may consume a great deal of time and resources.



Slide 23
Hazard control activities such as a charged line are needed to mitigate the dangers and traffic control problems may be affected. The victim may or may not be injured and the means of gaining access must take this into account.

Slide 24
Safety must be kept foremost in mind, and this sometimes compounds the complications because most extrication equipment, particularly access equipment, may generate a hazard of fire due to sparks, heat, or explosion.

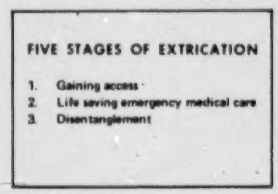


Slide 25
The second stage of extrication is called "giving life-saving emergency medical care." Such procedures do not contribute directly to the process of extrication in terms of physically removing or untangling the wreckage or debris from the victim, but they are essential to the proper accomplishment of extrication procedures, and to their primary goal of saving human lives.

Slide 26
The simplest form of emergency medical care might be a swift visual check and questions to ascertain absence or presence of injuries. First-aid might be initiated immediately upon discovery of the crash by the first person on the scene.

Slide 27
Such immediate care should be directed toward insuring that a clear airway exists and that it is maintained by artificial respiration if necessary.

Slide 28
Bleeding should then be controlled and progressive emergency medical care should protect all wounds, insure that all fractures are splinted and protect against the effects of shock.



Slide 29
The third stage of extrication is called "Disentanglement." Disentanglement of the victim from his immediate surroundings is accomplished after access has been gained. Aid may be rendered prior to, during and after disentanglement, although primary concern is naturally directed toward the removal of the victim from the vehicle.

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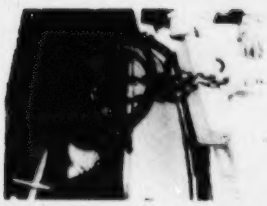
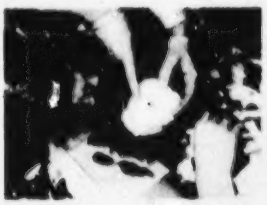
REMOVAL PROBLEMS



Slide 30
The concept of removing or disentangling the vehicle from the victim should be more properly emphasized in order to prevent further injury.

Slide 31
Great care must be exercised during the disentanglement process because it is at this time that tools and equipment are in the closest proximity of the victim and their effect upon him must be carefully considered. The effects of excessive heat, pressure and force on the victim must be minimized.

Slide 32
Other possible injuries must be taken into account. The possibility of a fractured spine must be a primary consideration when a victim is moved to free him from the wreckage.



Slide 33
As disentanglement proceeds, efforts to render emergency care may continue as additional body areas become accessible for treatment. If the EMTs are well trained and experienced, they will minimize additional injuries. Passersby may be tempted to pull a victim when removing him without consideration of further damage.

Slide 34
Tools and equipment may be required to free a victim from his entrapment or involvement with the vehicle. However, many times gaining access to the victim is accomplished in such a manner that disentanglement occurs simultaneously. In some cases careful movement of the body as a unit, preferably after proper preparation, will free the victim.

Slide 35
Other times, the vehicle's chassis and body may be so twisted that it will have to be cut, pried or jacked away from the victim.

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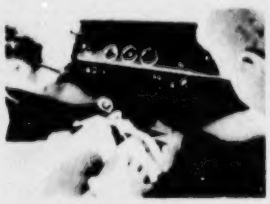
FIVE STAGES OF EXTRICATION

1. Gaining access
2. Life saving emergency medical care
3. Disentanglement
4. Preparation for removal
   Binding legs together on back board

Slide 36

The fourth stage of extrication is "preparation for removal." Once the structure and other impediments have been disengaged from the victim and other physical restraints in or around the vehicle have been removed



Slide 37

the victim should be carefully prepared for initial movement from the vehicle. *Now this preparatory activity has a two-fold purpose. The first* would be the protection of the victim from further injury during transport or removal from the wreckage. *The second purpose* would be to facilitate the removal of the victim.

Slide 38

Preparation of the victim should include the maintenance of an airway, the dressing of all wounds and the splinting of all known or suspected fractures. In other words, the patient must be packaged as a unit prior to lifting or moving.

FIVE STAGES OF EXTRICATION

1. Gaining access
2. Life saving emergency medical care
3. Disentanglement
4. Preparation for removal
   Binding legs together on back board
5. Removal

Slide 39

The fifth stage of extrication is "removal." During or prior to the removal phase, some choice of pathway, method, personnel and equipment will have to be made.

Slide 40

Plans and preparations for removal will have preconditioned these choices to a great extent. Therefore, these two phases should be considered together. If the victim has been properly prepared for removal and the proper equipment was used, then very few problems should arise from this point on. At least not like the ones faced while gaining access to the patient.

IMPORTANT POINTS

1. Patient care precedes extrication
2. Life support during access, removal and transportation

Slide 41

Two very important points must be remembered in extrication. The *first*, patient care precedes extrication efforts unless delayed movement would endanger the life of the patient or the EMT; and the *second*, once life supporting measures have been initiated, they must be continued during preparation, removal and transportation of the patient to the hospital. Certain basic rescue tools must be standard equipment in every ambulance whether it is in rural, suburban or urban service.

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Slide 42
Ambulances meeting DOT ambulance design criteria have the space and capacity for the basic extrication equipment which might be necessary in an emergency before a rescue unit or a more capable unit arrives. Every EMT must be well trained in their use.

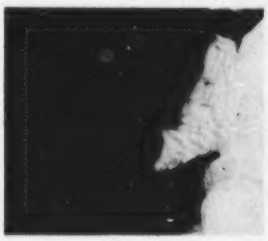
Slide 43
Some agencies have a rescue vehicle accompany the ambulance on every accident. In such cases the tools would be carried on the rescue vehicle. This is the only permissible exception to having them on the ambulance itself because the element of time is so critical in life-threatening situations that delays while waiting for tools and equipment cannot be tolerated. Lives that could be saved may be lost because of the delay.

The following series of slides will show some of the small and basic tools that can be carried either on the ambulance or in a light duty rescue vehicle.

Slide 44
Keeping in mind the safety of the rescuer as well as the victim, note the helmet, the gloves, and the safety glasses.

Slide 45
Here we have basic but very useful items such as an assortment of pliers, screwdrivers, and adjustable wrenches.

Slide 46
Hammers and various sizes of chisels.



Slide 47
A simple pry tool made from a spring leaf of an automobile and tapered on one end.

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Slide 48
Another improvised tool made from a spring leaf of an automobile. This is a good cutting tool made by sharpening one edge for cutting, and flattening the opposite edge for hammering.

Slide 49
Hack-saws with at least twelve (12) carbide blades.

Slide 50
A medium sized wrecking bar.

Slide 51
A pry bar.

Slide 52
Medium or large sized hook and chains.

Slide 53
This slide shows a cable hoist. A slightly different version of this item is commonly referred to as a come-a-long.

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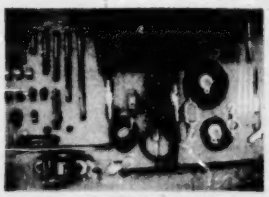
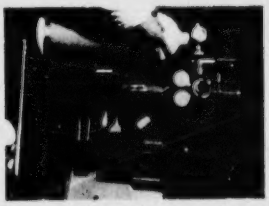
Slide 54
A pair of bolt cutters. A jaw opening of 11/4 inches is suggested.

Slide 55
Small, medium, and large size jacks and blocks. Note the platforms for the jacks. These are necessary to prevent the jack from sinking into the ground.

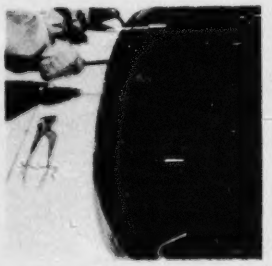


Slide 56
This slide shows all the components to the port-a-power and come-a-long units.

Slide 57
This is an electrical reciprocal or saber saw.



Slide 58
The air chisel is becoming a very popular extrication tool for several reasons. *First*, and foremost, it is a very safe tool because it does not create sparks or heat as most other tools do. It is small and easy to store and it does a very effective job in a minimum of time. Here the chisel is being operated off an air tank, which will give you enough air for approximately five minutes operation. This gives you a completely portable cutting tool in case you would have to leave the highway and work in a ravine or over an embankment. The air chisel can also be operated from an air compressor mounted on the crash truck or from the air tank of the crash truck if it has air brakes.



Slide 59
This slide shows a baling hook which is good for prying and lifting.

Slide 60
The electrical or linesman's knife.

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Slide 61
A seat belt cutter.

Slide 62
Within each phase of the extrication process there is a variety of possible methods or procedures. These, in turn, require a set of tools or equipment with capabilities to perform a group of general functions. For example, during the phase of "gaining access," one may use the method of opening a door or taking off a roof. In either method, the general functions of "severing" or "distorting" may also be required. However, the function of "distorting" may also be used during the phase called "disentanglement." Therefore, there will be considerable interaction, overlapping and duplication of specific equipment functions during the different phases of extrication.

The following set of slides is arranged to show more than one method of gaining access in several situations.

Slide 63
This series of slides shows the air chisel being used to open a jammed trunk lid.

Slide 64
Once the cut has been made, a prying tool can be used to pry the latch open.

Slide 65
Here, a prying tool made from a leaf of an automobile spring is being used. A large screwdriver would also work as well.

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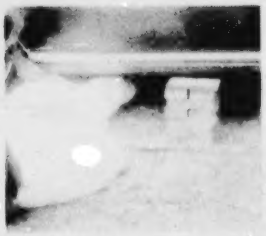
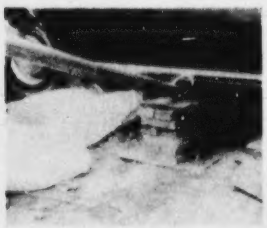
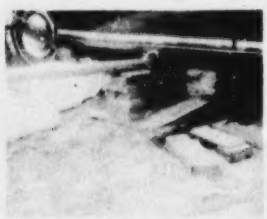
REMOVAL PROBLEMS



Slide 66
This series will show a victim pinned underneath the car. The vehicle will be raised using blocks and a pole for lifting the car from the victim.



Slide 67
The pole or metal pipe is placed on top of the blocks and under the vehicle. By pushing down on the opposite end of the pipe, the car is raised.



Slide 68
As the car is raised, more blocks are placed under the raised car to prevent it from falling and causing further injury to the victim.

Slide 69
This next series will show a victim pinned under the wrecked automobile. The vehicle will be removed by using a hydraulic jack and cribbing blocks. Notice that the jack is placed on a platform and then blocks used to build up to the level of the car frame. This will allow you more length on the jack and you will be able to raise the car farther.

Slide 70
As the car is raised, blocks are placed under it to prevent falling. Note the manner in which the blocks are stacked to prevent slipping.

Once the length of the jack has run out, it can be removed and the car held by the blocks. You can then build up under the jack and start again.

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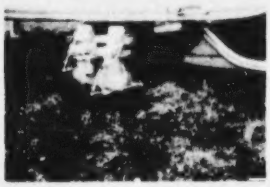
REMOVAL PROBLEMS

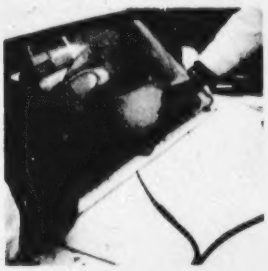
Slide 71
Here, the rescuers have put additional blocks under the jack and raised the car farther. Notice that the blocks are criss-crossed (see color) to prevent slipping.



Slide 72
This slide shows a good method of constructing a set of cribbing blocks. Notice the small ropes for quick handling. The set includes a variety of different size blocks.

Slide 73
This series of slides shows the EMTs removing a front windshield to gain access to a victim. This slide shows the chrome stripping being removed using the baling hook.

A lineman's knife previously illustrated is also a good tool for use in removing the molding from around the glass.



Slide 74
Once the chrome stripping and rubber molding are removed, the glass can be pried and lifted out with the baling hook. Notice that the EMT is prying and lifting *from the bottom.*

Slide 75
Sometimes you may find that the windshield is stuck and cannot be broken loose by prying from the outside. In that case, if one of the windows should be down, an EMT can crawl through the window and push on the windshield with his feet as shown here. This, too, depends on victim location inside the vehicle.

Slide 76
Here, the windshield has been popped out and is being removed to allow plenty of room for removing the victim on a backboard through the front of the car when necessary.

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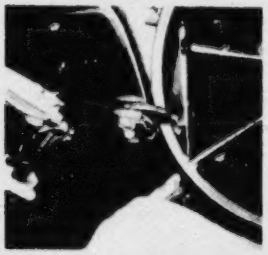
Slide 77
This series of slides simulates a victim trapped behind a steering wheel. A bolt cutter will be used to cut away part of the steering wheel to allow for more room to work on the victim and for removal.

Slide 78
In this slide, the EMT is using a pair of channel lock pliers to remove the hard plastic coating.

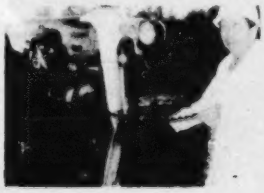


Slide 79
With the plastic removed, the bolt cutters are used to cut away the bottom half of the steering wheel. If the bolt cutters are large, as used here, it will not be necessary to strip off the plastic.

Again while one EMT makes the cut, another one should protect the victim by placing something between the victim and the wheel.

Slide 80
In this slide an overturned car is used to show how a chain is fastened to some solid object underneath the car. Notice the cribbing block used under the chain to support the metal.

Slide 81
This slide shows a very handy tool, a large hook, which eliminates the need to crawl under a car to attach a chain. This tool could save a lot of precious time.



Slide 82
This slide shows one place where it could be hooked. It would also hook over the axle, or in the front of leaf springs.

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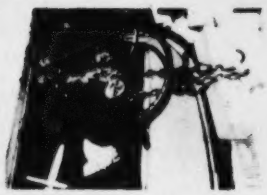
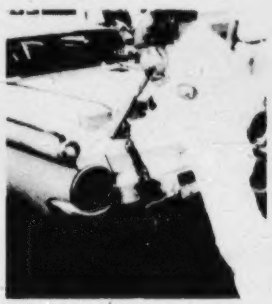


Slide 83
Another chain should be secured around the steering wheel with a cribbing block under it.

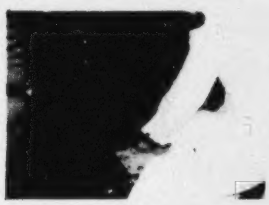
Slide 84
Now the come-a-long is placed between the chain which was attached under the front of the car and the chain attached around the steering wheel. One or two additional cribbing blocks may be used to prevent the chain from catching on the metal. By tightening the come-a-long, the steering wheel is pulled away from the victim.

Slide 85
The next two series will show how to pull the front seat backwards to create more working room. Both the come-a-long and a chain hoist will be demonstrated. This slide shows a chain being secured underneath the vehicle. Again, notice the use of cribbing blocks.

Slide 86
Here, the come-a-long is attached to the secured chain from underneath the car and to a chain secured under the front seat.



Slide 87
With plenty of cribbing blocks used to support the metal, the come-a-long is tightened to pull the front seat backwards.



Slide 88
This slide shows the use of a small hook which is hooked on support above the floor track and eliminates the time consuming process of fastening a chain around the seat.

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Slide 89

Here, we again see the small hook attached to the back of the front seat and chain hoist. The hoist is again secured underneath the rear of the car. By tightening the chain hoist, the front seat is pulled backwards. Note the EMT steadying the victim's head and neck.

Slide 90

Now that the victim and seat are removed, we will show you where to attach the hook and chain. This should be the support by the EMT's right hand. Do not attach it to the bottom or platform which is securely attached to the frame of the car.

Slide 91

The platform should remain with the car and the seat will be pulled away from the platform. If the seat can be slid back on its track manually before removal, it will be easier to strip the remaining teeth.

The next series of slides will consider several different methods of gaining access through the door of an automobile. Several tools will be demonstrated.

Slide 92

In this slide, we have an overturned vehicle. Notice that the automobile was first stabilized with cribbing blocks. The EMT is hitting the edge of the door with a hammer. This causes the lip or edge of the door to flare outward, giving the EMT a place to insert a pry-bar.

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Slide 93
This shows the EMT using the pry-bar. A second EMT is helping to pry with a small wrecking bar until the door is sprung enough to get a good hold with the larger pry bar.

Slide 94
This slide shows that the door has been pried open. Use caution when opening the door and make sure that the victim does not fall as the door is opened.

Slide 95
Another way of gaining access through the door is by cutting the jammed door handle using the sharpened edge of an automobile spring and a hammer.

Slide 96
This is a very simple but effective cutting tool which will cut out the door handle very quickly and it requires very little space for storing and transporting.

Slide 97
Once the cut has been made, the EMT can simply reach in and lift the rod to open the latch.

Slide 98
Doors to older model cars can be opened with pry-bars and wrecking bars, as shown previously, especially those built before 1965. Automobiles built after 1965 have doors that are equipped with a new safety lock which cannot be pried open.

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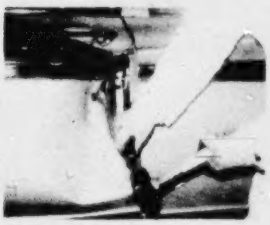
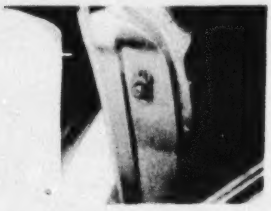
REMOVAL PROBLEMS

Slide 99
As soon as the latch is exposed you can see that it is constructed differently than those on older model cars.



Slide 100
It cannot be pried open so we are using a hammer and chisel to cut the two rivets, not the cold steel safety bar.

Slide 101
With the door open we can see the difference in the two types of latches.



Slide 102
Half of the latch mounted on the frame.

Slide 103
The other half on the door. You see how they interlock and cannot be pried open.

Slide 104
Another tool used quite frequently for opening jammed car doors is the port-a-power.

Slide 105
Here, the tool is used as a spreader to pry open the jammed car door. Do not stand in front of the wedge, it could injure the EMT if it sprang loose.

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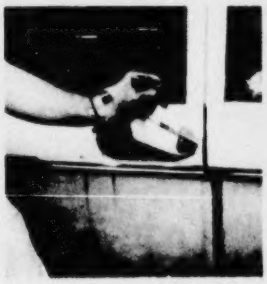
Slide 106
One of the safest and quickest tools available for cutting around the handle of a jammed car door is the air chisel. This series will show the use of an air chisel to open a door.

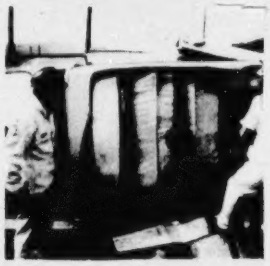


Slide 107
A continuation of the previous scene. The necessary cut has been made.

Slide 108
Once the cut has been made, an EMT can reach in and lift the rod – unlatching the door.

Slide 109
The next series will show a car turned on its side. Access will be gained by cutting the top with an air chisel. Be certain to cut the section large enough to enter and remove the victims on the appropriate equipment.

Slide 110
Here, the EMT is cutting the entire top off the vehicle.



Slide 111
When the metal has been removed, you will find both round and flat supports that must be cut away.

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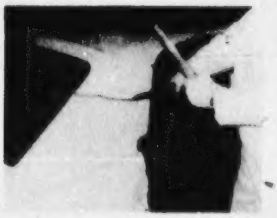
Slide 112
Bolt cutters, again, are used here to cut the supports.

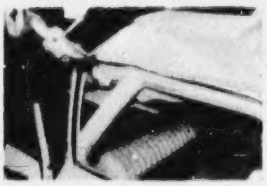
Slide 113
Once the supports have been cut away, you will have to cut or tear away the upholstery and you will have access to the victim.

Slide 114
The following series will show a victim pinned in the automobile by a crushed top. Several different tools and their use will be demonstrated. This slide shows a hack-saw with a carbide blade being used. To speed up this operation, one hack-saw could be used on each of the four support posts at once.



Slide 115
Here, the cutting tool, made from an automobile spring, is used for cutting the thin metal.

Slide 116
A reciprocal saw will do the job very quickly if you have electricity at the scene. Several blades should be available because they break quite easily, although no more so than blades to the hack-saw.



Slide 117
As seen here, the reciprocal or saber saw did a good job of cutting completely through the center support post.

Slide 118
The next series shows a victim lying in the top of an automobile that has overturned. The rope-loop and long backboard will be used to remove the victim.

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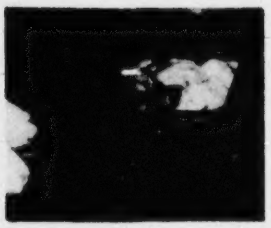

Slide 119
The backboard is placed flush with the frame of the window.

Slide 120
The rope-loop is placed over the victim's chest and under his arms.

Slide 121
Traction is applied gently and steadily to pull the victim out of the window and onto the backboard. The victim must be guided by extra EMTs or bystanders, especially as he comes onto the board to prevent injury to the victim. Padding between the end of the board and the window could prevent injury to the victim's back. The victim once cleared of the wreck can be prepared for final transport.

Slide 122
This series shows the proper sequence of actions in securing a victim to the short backboard. The head of the victim is supported by one EMT while the other applies a cervical collar.

Slide 123
The short board is positioned behind the patient while the head is still supported.

Slide 124
After the head and chin bands are secured,

Slide 125
one cravat is tied from the left-lower corner, across the chest to the upper-right corner.

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Slide 126
The next cravat is tied from the lower-right corner, across the chest to the upper-left corner of the board.

Slide 127
A third cravat is tied straight across the chest, well up underneath the arms.

Slide 128
A fourth cravat is tied across the stomach to secure the lower portion of the short backboard to the victim's body. Note the forearms have also been secured to restrict movement. This is the way the victim looks now that the board is thoroughly secured to his body. With the victim secured in this manner, you should not have any further problems in transferring him onto the long backboard for removal.

Slide 129
Occasionally we do have bus wrecks. Therefore, this series of slides is intended to acquaint the EMT with some of the more important features of the vehicle. The coach usually seats 46 passengers. It carries a total of about 130 gallons of diesel fuel in two tanks located to the rear of the bus, just in front of the engine.

Slide 130
Looking at the baggage compartment, the framework is of tubular steel rods. These rods go all the way up and over the top for support. The fuel lines travel under the center of the floor from the tanks to the engine on all models. The air conditioning unit is located in front of the engine (see arrow) or to the rear of the baggage compartment. *EMTs should not cut in this area because of the danger of freon.* The coach is also equipped with a rest room which is located in the rear of the bus. Don't forget to look in this area in case you are working such an accident. Be careful of any chemical spills in this area.

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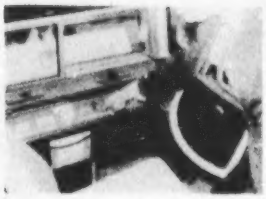
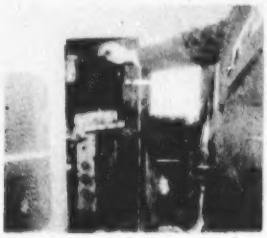


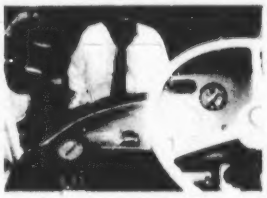
Slide 131
Buses should be studied for safety features. There are several built into this particular coach. For example, if the switch-key will not turn off the motor, there is an emergency stop located on the instrument panel.

Slide 132
If the emergency stop or switch cannot be reached or fails to work, there are two battery shut-off switches located in the engine compartment. Simply give them a half turn to the right. These are identified by the red paint.

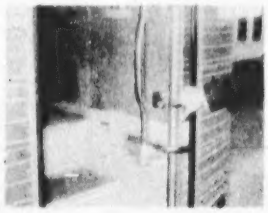
Slide 133
If all mentioned procedures fail to stop the engine – break or cut the fuel intake line going to this pump. This will stop the engine.



Slide 134
Each coach is equipped with two batteries located one on either side, just to the rear of the back wheels. However, they should not have to be disconnected because the two battery shut-off switches in the engine compartment accomplish the same results. The most vulnerable places for fire to start in the coach are the brakes on the rear axle, the transmission, and the rear engine compartment. To extinguish the fire, use carbonate soda (dry chemical) or CO_2.



Slide 135
To gain access to the coach through the door in case the motor is not running, there are at least three manual releases for the door. One is located in front and to the left of the driver.



Slide 136
Another is located to the right just inside the door. Both of these can be operated from inside the coach.

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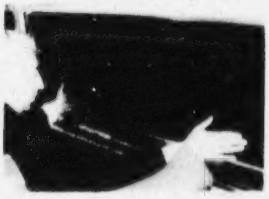
Slide 137

In case there is no one inside the bus able to work these releases, there is one located under the door just in front of the right front wheel which can be operated by the EMT.



Slide 138

Extrication efforts should be concentrated on removing passengers through windows when the door is obscured. The coach is equipped with pop-out glasses. Simply place your hands in the lower corners and push firmly.

Slide 139

Of course if no one inside the bus can do this for you, a large screwdriver, pinch bar or wrecking bar can be placed under the metal frame around the window to force the window out. To open the front windshield from the outside, take out the rubber locking strip which runs around the windshield. This strip is forced into place between the wide rubber frame, holding the windshield in place.

SLIDE 140

This concludes the slide narration. It is another DOT effort to reduce the dead on arrival at the emergency room and hopefully, total deaths from highways. Summarizing, remember the general rule of extrication. *No victim* should be removed until all life-threatening conditions are corrected. The victim's body is immobilized or packaged as one complete unit. This represents another DOT initiative in the rescue and emergency medical services field.

Course: Crash Victim Extrication

Lesson Title: Demonstration by instructor of forcible entry, disentanglement, and safety techniques.

Time: 3 Hours

Instructor's Lesson Plan

3

Instructional Aids: Necessary tools, equipment and wrecked vehicles to demonstrate the *Teaching Points* listed below. (Caution: Check with the local power company and fire department for any standing orders or locally-accepted procedures for performing Teaching Points "d" and "e").

Objectives:
a. Evaluate situation
b. Safety precautions
c. Gaining access to victim(s)
d. Releasing victim(s) from entrapment

TEACHING POINTS	NOTES AND VISUAL AIDS

DEMONSTRATION

The instructor and one or more instructor aides should demonstrate to the class the proper use of all extrication tools and equipment. The instructor should select one or more wrecked cars to clearly demonstrate each accident situation. The situations should include but are not restricted to the following:

a. Create a safe environment and evaluate the total accident scene
b. Account for all accident victims and carry out triage procedures
c. Extinguish small gasoline and electrical fires
d. Remove "hot power lines" from vehicle
e. Methods of stabilizing wrecked vehicles
f. Pry open doors, trunk and hood
g. Cut around door and trunk locks
h. Remove windshield and rear window
i. Pull away crushed posts, seats and steering column
j. Jack-up dash board, crushed top of car
k. Cut "U" shaped section from top of overturned vehicle
l. Methods of removing victims from vehicle on short and long backboards

Note to instructor:
The students should be informed of the safety locking mechanism installed in vehicles after 1967. It is almost impossible to pry these doors opened with wrecking bars and spreaders. It is necessary to cut a section around the door handle exposing the locking device which can usually be tripped by hand.

ILLUSTRATIVE STORIES

The following stories were excerpted from newspaper accounts of ambulance and rescue squad efforts to save lives. They illustrate the need to always follow professional procedures when human lives are at stake.

1. During an accident that turned their car on its side, two occupants of a small foreign car were pinned under the

LESSON 3 (Con't)

TEACHING POINTS	NOTES AND VISUAL AIDS
cowling. The two-man ambulance crew elected to cut the top out of the vehicle in order to extricate the victims. The power saw started a fire, and the crew's only fire extinguisher was used to put it out. They continued to cut, and the car again caught fire. Since the fire extinguisher was empty, the two victims were burned to death. 2. An injured teenage driver of an overturned vehicle regained consciousness after 72 hours and inquired as to the whereabouts of his three friends. Rescuers had found one teenage girl that arrived at the hospital DOA. The boy explained that two friends had hidden in the trunk to avoid paying at the drive-in movie they had intended to see. Police officials checked the vehicle at the City impounding lot and found the two missing boys in the trunk – dead. 3. A ton and a half closed van truck missed a turn and ran into a lake, submerging to the top of the cab. The bodies of the driver and one other person were recovered from the cab, and the truck removed from the lake. Twelve hours later the rear of the closed van was opened and it was discovered that 28 migrant workers had also drowned.	

Course: Crash Victim Extrication

Lesson Title: Practice (skills training)

Time: 6 Hours

Instructor's Lesson Plan

4

Instructional Aids: Necessary extrication and patient care equipment and supplies, appropriate number of wrecked vehicles, and moulage supplies.

Objectives: Provide practice of following skills:

a. Evaluation of accident scene.
b. Triage of accident victims.
c. Entry into vehicle.
d. Victim emergency medical care.
e. Disentanglement.
f. Removal.

TEACHING POINTS	NOTES AND VISUAL AIDS
1. Students should be divided into rescue teams with an appointed team leader and given an accident problem to solve. 2. Each student on the team should have the opportunity to serve as team leader. 3. In practice situations where two EMTs are required to carry out a procedure, i.e., use of the come-a-long or porta-power kit, the students should rotate functions. This will aff d each student the opportunity to carry out both functions. 4. All rescue skills with appropriate tools should be carried out in the practice demonstration by each member of the team. 5. Evaluation of student's emergency care techniques, selection of appropriate tools and rescue skills should be recorded by the instructor. 6. The students should be made aware of their mistakes in both emergency medical care procedures and rescue skills. At the completion of the practice session the students should be shown how emergency medical care procedures and rescue skills should have been conducted. This procedure should not only be beneficial to the student concerned but to all students. 7. Students should assist the instructor aide in collecting, checking, tagging damaged equipment and packing equipment and supplies in appropriate boxes. It is suggested that each set of equipment be marked with a different color paint for easy identification.	

Course: Crash Victim Extrication

Instructional Aids: Critic forms, and certificates

Lesson Title: Conclusion

Objectives: Recognition for completion of course, and class evaluation of training course.

Time: 2 Hours

Instructor's Lesson Plan

5

TEACHING POINTS	NOTES AND VISUAL AIDS
1. To make this standard training course as acceptable and beneficial to the student as possible and to provide a mechanism for continual improvement and upgrading of this course of instruction, the NHTSA Rescue & Emergency Medical Services Division welcomes and encourages a class critic of each course. 2. Some form of recognition for successful completion of the course is recommended, i.e., arm patch or rocker arm patch and a certificate. An NHTSA certificate is available, free of charge, designed to identify State and Federal involvement in this vital program area – emergency medical services training. 3. The local press, radio and TV media should be invited to the award ceremony. The general public should be made aware that their ambulance and rescue services are interested in providing the best emergency medical care possible to its citizens when in need.	